MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY.
UNITED STATES DEPARTMENT OF AGRICULTURE

Number 27. July, 1916.

BUREAU VISITORS DURING JULY.

H. A. Ballou, entomologist on the staff of the West India Department of Agriculture, was in Washington on July 21. He is en route to Egypt where he will be engaged for a year in the study of **Gelechia gossypiella.**

A. H. Ritchie, until recently entomoligist in the Department of Agriculture in Jamaica, is now engaged in entomological work for the sugar planters' association of **Jamaica.**

A recent visitor at the Drummond laboratory is Mr. C. Hanslope Bocock, assigned by the British Board of Agriculture to study diseases of adult bees in the United States. The socalled "Isle-of-Wight" disease or Microsporidiosis is reported to have caused extensive losses in Great Britain and the object of this investigation is to learn something of tne diseases of adult bees in America and throw some light on the conditions observed abroad. Mr. Bocock spent a month recently with Dr. Burton N. Gates, Massachusetts Agricultural College, Amherst, and will visit other parts of the United States.

ANOTHER EDIBLE LARVA.

While Mr. V. A. Roberts of this office was preparing larvae of the squash-vine borer (**Melittia satyriniformis** Hbn.) for preservation, by boiling, it was suggested that he test them as to their edibility. Some were then boiled for about five minutes and tried by Mr. Roberts who pronounced them good. They were then distributed around the office and Dr. Howard, Mr. O'Leary, Mr. Duckett, Mr. Jacobs, and the writer tested, and passed favorably on them, some claiming that they were even better than the white grub **Lachnosterna** sp. The larvae would probably have been more palatable if they had been prepared with some kind of seasoning.

W. H. WHITE.

EFFECT, ON REARED MATERIAL, OF HUMIDITY, ETC., PRODUCED BY VARIOUS TYPES OF REARING CAGES.

The following is from Mr. S. A. Rohwer, Specialist in Forest Hymenoptera:

"Dear Dr. Howard:-

I am very much interested in the extract of your letter to Dr. Hunter published in the June Monthly Letter pointing out the desirability of some system to keep all members of the Bureau informed on the various types of cages. I think that this is a very important matter and am of the opinion that there should be some one publication describing and naming all the various types of cages or rearing devices used by Bureau men. It seems to me that it is of great of importance to know definitely the kind of cage in which the insect is reared as it is a well established fact that albinistic and melanistic forms can be produced by the

alteration of temperature and humidity, and with different kinds of cages there is a decided difference in the relative and actual amount of humidity, and temperature. For example, glass jars partly filled with sand retain a more constant and uniform humidity than do the flower pots. The flower pots dry rapidly and usually need to be watered every few days. What effect these two types of cages would have on adults is unknown but it seems to me that inasmuch as we know that humidity will alter the color we should do our work in such a manner that we could get from our notes information concerning the type of cage in which the insect was reared.

In my systematic work I have found that reared parasites are often "different species" than those which have been collected and even if it is the same "species" and from the same host there is often a great variation in color, and to some extent the structure in reared material from different parts of the country or from different collectors. The question occurs, does any of this variation come from a difference in methods of rearing?

It seems to me that it would be extremely desireable to have publication describing and illustrating in detail all of the various methods used in in rearing and that each one of these methods should be designated by some name or symbol so it would be possible to state in the notes what type of rearing cage was used. Preparation of such a publication would require considerable time and it seems to me could only be handled by a committee more or less familiar with the various types of cages already in use. Then if the committee was supplied with descriptions and illustrations of all of the types of cages used in the various field stations they could determine some method of classification and designation of the various types. At the Eastern Field Station we use a combination of letters to designate the types of cages nd I have used all the letters from A to G." S. A. Rohwer.

[Note:-

With reference to the above letter: It was suggested several years ago to a member of the Bureau, that if an excess of moisture and its attendant humidity, obtaining in nondraining, glass rearing jars, were undesirable features, the condition might be remedied by the use of a woven cotton wick (like a lamp wick) one end to be placed in the sand at the bottom of the jar, and the other end carried over the side of the jar and hanging on the outside.

While the moisture would be carried off by capillary attraction more rapidly than by normal evaporation, it would obviate such a condition as an unduly large accumulation of moisture, and thus correct any attendant high humidity. B. A. R.]

PUBLICATIONS FOR THE CURRENT YEAR.

A change from the usual procedure, respecting publications of the Department of Agriculture, has been made effective for the ensuing fiscal year. The total appropriation available for all printing has been prorated among the different Bureaus of the Department. This allotment includes Farmers' Bulletins, Department Bulletins, Circulars and Reports, miscellaneous and job printing.

While this method of apportioning the printing fund has many advantages over that obtaining in previous years, the sum allowed must be administered with strict economy or the number of publications must be reduced.

There are several ways in which the employees of the Bureau may assist in obtaining the best results from the limited fund.

(1) Plate work is the most expensive item relating to printing.

Do not overbalance your paper with numbers of illustrations that do not elaborate the subject opportunely. Do not furnish more than a single photograph to illustrate a given feature. Avoid repetition of idea in illustrating your bulletin.

In checking up certain phases of the printing expense for the fiscal year 1916, the following fact was developed:

One office published 5 bulletins at a cost of $1,000; another office published 5 bulletins of the same type at a cost of $700; to wit-

Number:	Cost:	Total pages:	Total plates:	Total figures:
5	$1,000	57	1	37
5	700	45	0	24
Difference	$ 300	12	1	13

The $300 difference is appearently produced in part by the larger numbers of illustrations, since it is evident that the difference of 12 printed pages did not contribute largely to the excess in cost.

In many cases photographic prints are furnished, often in duplicate, which are unfit for publication, hence the waste of material. In other cases, as many as four prints are submitted to illustrate a single nonimportant phase or minor detail, which could have been covered by one photograph or even eliminated.

Do not furnish plates for your paper if text figures will suffice.

(2) Another expensive item in printing is caused by the author's re-writing his bulletin in the galley proof! This is indefensible. A duplicate galley and page proof is sent the author, solely for the purpose of correcting actual errors, and not for the elaboration of afterthoughts, unless investigations subsequent to the presentation of the manuscript have developed radical changes.

(3) Many forms for recording notes can as well be flexotyped as printed. The general following of this practise would release funds sufficient for printing several bulletins a year.

(4) The cost of printing pin labels is considerable. Orders involving $100 have been frequent. Three such orders would pay for a small Farmer's Bulletin in an edition of 25,000 copies. In many cases photographic labels will serve all purposes, and they can be prepared in a small fraction of the time required for printing. Moreover for about $20 a set of type and accessories can be procured. One section of the Bureau has such an outfit which has given satisfaction.

These are but a few ideas which suggest themselves, in support of the suggestion that while the printing allotment may prove to be ample for all purposes, it will only prove so, by the most careful handling, and the investigator or the man who writes the bulletins will have a large part of the attendent responsibility. B.A.R.

CAGES USED AT NEW ORLEANS LABORATORY.

In response to Doctor Howard's suggestion in the June number of the Monthly Letter of the Bureau of Entomology, the following descriptions of cages used for rearing **Diatraea saccharalis** at the New Orleans laboratory are given. Young larvae can be placed in jars with cane or corn leaves, but for larger larvae individual glass tubes are used. Long glass tubes about ½ inch in diameter are bought by the pound from a wholesale druggist and are filed and broken into lengths of about 7 inches. A piece of corn or sugar cane almost filling the tube is inserted, the larva put in, and each end of the tube is plugged with raw cotton. A number of these tubes are placed in a cigar box. They approximate to some degree the conditions of the burrows of the larvae in stalks of cane or corn, and the similarity is increased by the obscurity of the interior of the cigar box. The larvae can be observed readily. It is very easy to clean the tubes, a cotton plug simply being forced through each tube with a rounded stick or plunger. . . . Adults are placed

in cylinders of wire screen and cheesecloth set on saucers of damp sand. From a roll of ordinary wire screen a strip 7 inches wide and 18 inches long is cut. The two ends are bent together and fastened by by sewing with strands of wire. One or two of the cross wires are then pulled off one end of the cylinder, and on the projecting ends of wire a piece of cheesecloth is pressed to form the top, the wires passing through the cloth and holding it in place. The finished cylinder is six inches in diameter and seven inches high. It is very cheap and easily made, and affords a maximum of ventilation. [T. E. Holloway.]

PLANT MATERIAL DESIRED FOR INSECTICIDE INVESTIGATIONS.

There appear, from time to time, in various newspapers, magazines and other publications, reports and accounts of animals being poisoned.

In order to gain all the information possible concerning poisonous plaants these reports are always worthy of attention, even though later disapproved, in such published accounts should be sent to this Bureau for record and filing. If a person or some lower animal has been poisoned by a particular plant in your neighborhood, that plant may contain valuable insecticidal constituents and it should be collected, if possible, and forwarded to Dr. Quaintance, together with all available information pertaining to it. Immediately after being collected, the plants should be dried, each sample of dried material to contain **not less than six ounces**. The following list includes some of the plants desired by the Bureau of Entomology: **Amanita muscaria** (fly Amanita); **Veratrum** spp., **Sarcobates vermicularis; Aconitum** spp.; **Delphinium** spp.; **Helleborus viridis; Jatropha stimulosa; Kalmia** spp; **Nerium oleander;** and the socalled "loco" weeds. A few of the above plants have already been used to test their toxic action on insects, but the material has been too limited to permit a thorough test. [N.E. McIndoo.]

WANTED

Larvae of LeConte's sawfly. (See Forest Insect contribution on page 10)

COOPERATION DESIRED IN TRAPLIGHT WORK.

The following is an outline of a project to be followed out in connection with the running of a traplight at Hagerstown, Maryland, as arranged by Mr. Hyslop.

Reason for investigation:

It has often been asserted that **Lepidoptera** only fly to the light after oviposition and that in the majority of cases males alone fly. Our observations seem to point to the fact that this conclusion is erroneous.

Plan for investigation:

Trap light to be run as often as possible throughout the season . A selected number of the most common species to be preserved in alcohol with the date of collection for each. This material to be dissected and the percentage of males and females of each date tabulated and the presence or absence of eggs in the females to be tabulated.

Cooperation desired:

It will be very desireable if other field Laboratories running traplights will place in alcohol the entire catch of the predominant species which come to light at that point, with the date of collection.

J. A. Hyslop,
Hagerstown, Maryland.

PUBLICATIONS ISSUED BY THE BUREAU OF ENTOMOLOGY DURING JULY.

Department bulletin No. 382: Cotton boll weevil control in the Mississippi delta, with special reference to square picking and weevil picking, B. R. Coad.

Farmers' bulletin No. 740, House ants: Kinds and methods of control, C. L. Marlatt.

Farmers' bulletin No. 741, The alfalfa weevil, Geo. I. Reeves, P. B. Miles, T. R. Chamberlin, S. J. Snow, L. J. Bower.

Journal Agricultural Research: K-38, California green lacewing fly, V. L. Wildermuth.

Journal of Agricultural Research: K-39, The larval characters and distribution of two species of Diatraea, T. E. Holloway.

LIBRARY

Miss Mabel Colcord, Librarian.

NEW BOOKS

American Entomological society. Memoirs. No. 1. Phila., 1916. (Cresson, E. T. The Cresson types of Hymenoptera. 140p.)

Braun, Max. Die tierischen parasiten des menschen. v. 1, ed. 5. Wurzburg, 1915. 559p. illus.

British Guiana. Department of science and agriculture. Report for 1914-1915. Georgetown, Demarara, 1916. Apx. III. Report of the economic biologist, C. E. Bodkin. 11p.

Bussey institution. Harvard university. Laboratory of entomology. Contributions v. 1-2. Boston, 1909-1913. Contains 70 contributions.

Funkhouser, W. D. Review of the Philippine Membracidae. (Philippine jour. sci. v. 10, Sec. D, no. 6, p. 365-405, Nov. 1915)

Indiana state entomoligist. Annual report 8, 1915/15. Fort Wayne, 1916.

Mosher, Edna. A classification of the Lepidoptera based on characters of the pupa. Urbana, Ill., 1916. (Bul. Illinois. lab. nat. hist. v. 12, Art. II, p. 17-159, pl. XIX-XXVII)

Nova Scotia-Entomological society. Proceedings no. 1. Truro, N. S. August, 1915. 107p.

Schultze, W. A catalogue of Philippine Coleoptera. (Philippine jour. sci. v. 11, Sec. D, no. 1-2. Jan-Mar. 1916. 194p.)

The librarian asks that those in charge of entomological laboratories or other field offices of the Bureau will send her not later than August 15, 1916 a memorandum of all books in such laboratories and offices, purchased at the expence of the Bureau.

M. C.

BEE CULTURE

E. F. Phillips, In Charge.

Dr. A. H. McCray was on leave for several days, visiting his home in Ohio. Mr. Geo. S. Demuth returned July 17 from Indiana where he was on leave.

Arrangements are being completed for prosecuting a project in extension work in beekeeping in the Southern States. It is expected that one specialist in beekeeping will be assigned to work in North Carolina, in cooperation with the Demonstration Service of that State, and similar arrangements will probably be made in some other state. A specialist will also be assigned for general work in the Southern

States in cooperation with the Office of Extension Work in the South, States Relations Service. The good results obtained in the preliminary work in North Carolina last fall indicate that work of the character proposed will be of great benefit to southern beekeepers. Assignments for this work have not yet been made.

Dr. E. F. Phillips is planning to attend the Field Meeting of the Beekeepers of the Upper Mississippi Valley at Dubuque, Iowa, August 1 and 2, and the series of three meetings in Tennessee beginning August 9. Field meetings of this character are proving more beneficial than the usual winter meetings of the beekeepers' associations.

Reports now coming to the Bureau indicate that the season is one of the finest for white clover honey that has ever been experienced. Swarming has generally been excessive.

CEREAL AND FORAGE INSECT INVESTIGATIONS.
W. R. Walton, Acting in Charge.

News Items from the Tempe (Ariz.) Field Station.

July 20, 1916.

Lycaena marina has been the surprise of the month. Adults can be seen by the thousands over alfalfa fields and the little sluglike larvae are doing a great amount of damage to alfalfa bloom upon which they feed.

Bruchophagus funebris continues to be on the increase, and in many fields the infestation is so heavy that farmers are cutting their alfalfa for hay instead of letting it go to maturity for seed. The loss will run into hundreds of thousands of dollars this year to seed growers in the Salt River Valley alone.

In experiments made in Arizona to determine the best means for poisoning grasshoppers, it was found that a pound of white arsenic (Arsenious oxide) was just as efficient as the same quantity of Paris Green, and treatments made at 5 p m were just as effective as those made at 4 a m. Several hundred acres were treated and all with fair success. "Blackstrap", the refuse from sugar factories was noted to be better than baker's sorghum for sweetning the mash. A half pound of white arsenic was altogether inefficient, less than five percent of the hoppers being killed.

V. L. WILDERMUTH.

NEWS ITEMS FROM CHARLOTTESVILLE (VA.) FIELD STATION.

July 14, 1916.

I. tritici found to be very abundant in the vicinity of Warrenton, Va., the only place, thus far, visited this year in search of this insect.

Hessian fly reported to this laboratory as being destructive to wheat near Ashland, Va.

A species of **Crambus** doing serious injury to corn in the vicinity of Warrenton and Charlottesville, Va.

Diatrea saccharalis injuring corn seriously in the Tidewater district of Virginia according to the observations made by Dr. Fox.

NEWS ITEMS FROM MAXWELL (N. MEX.) FIELD STATION.

June 24, 1916.

Hemileuca oliviae.- Only a small percent of eggs hatched, resulting larvae in first and second instars.

Pentatoma sayi.- First generations nymphs present in field. Adults or nymphs

not numerous in grain fields, probably due to prolonged drought.

Macrobasis unicolor.- Present in alfalfa in greatly increasing numbers.

Hippodamia convergens.- Very numerous on both wild and cultivated plants.

Grasshoppers.- Nymphs beginning to damage cereal and forage crops. Not as numerous as last year.

Toxoptera graminum.- Very few individuals present on this date.

D. J. Caffrey.

July 22, 1916.

Hemileuca oliviae.--- Majority of larvae in 3d and 4th instars. Very scarce, and backward, in developement. Larger larvae heavily parasitized by Tachinids, in the areas of low ground.

Pentatoma sayi.--- A few adults, and nymphs, of second generation present in the grain fields. Species is present in greatly reduced numbers compared with this time last year.

Grasshoppers.---Locally very numerous, in irrigated sections. Poisoned baits used with excellent success. Species concerned are **Melanoplus bivittatus, M. differentialis, M.corpulentus** and **M.plumbeus**.

Meliana albilinea.--- Fourth instar larvae present on oats. Not numerous enough to do appreciable damage.

Hippodamia convergens, H.lecontei and **H.sinuata** present in great numbers in grain fields, on various weeds and among willows along the river bottoms. Adults are apparently feeding on Aphididae present on these plants.

Collops bipunctatus.--- Unusually abundant in grain fields and on range grasses. Adults an important factor in destroying small **Hemileuca oliviae** larvae and eggs of miscellaneous insects.

Note.- The men at the Maxwell station wish to thank the members of the various field stations who so kindly sent in lepidopterous larvae, during the recent shortage of this material. The shipments received enabled the work of rearing predaceous beetles to be carried on without serious interruption.

D. J. Caffrey.

NEWS ITEMS FROM GREENWOOD (MISS.) FIELD STATION.

July 17, 1916.

Corotoma trifurcata are very much less abundant this year than last, also one of its principle parasites **Colateria diabroticae** which was extremely numerous last season.

Prodenia omnivorgalli is becoming quite numerous in this locality [illegible] than at any time during the past two seasons so far as we have observed.

Pyroderces rileyi The larvae of this insect are being found in increasing numbers on corn silks, the actual damage to the ear is slight as yet.

There have been heavy showers practically every day for the first two weeks in July, and this has hampered field work at the station.

C. F. TURNER.

NEWS ITEMS FROM CHARLESTON (MO.) FIELD STATION.

June 24, 1916.

Franklinella fuscus is again abundant in alfalfa and doing marked damage throughout this section of Missouri.

Grasshoppers are more numerous at present than during the past 3 years.

Notes on the date of appearance of adults of **Colaspis brunneus** from other parts of the country are desired.

E. H. GIBSON.

July 19, 1916.

Halticus citri Ashm. (Heteroptera) has been unusually abundant during the past three months throughout southern Missouri and has been a decided pest in many alfalfa and clover fields. The brachypterous females seem to be much shorter lived than the long winged females.

A series of experiments are being carried on in which gelatine capsules filled with carbon bisulphid are placed about the roots of corn plants infested with **Heristonotus uhleri**. When the capsule collapses the fumes of the carbon bisulphid permeate the soil which in character is very light and sandy.

From reports received from a number of localities in the Central States it appears that leafhoppers are extremely abundant this summer in meadow and pasture lands. The species principally involved are **Deltocephalus nigrifrons** Forbes and **Cicadula 6-notata** Fallen.

E. H. GIBSON.

NEWS ITEMS FROM FOREST GROVE (OREGON) FIELD STATION.

July 19, 1916.

The first individuals of the second brood of **Dasyneura leguminicola**, adults, appeared in the fields around Forest Grove July 8 this year. They are still coming out in considerable numbers July 19. These conditions obtain in red clover fields in which the hay crop was cut subsequent to June 15. In fields which were pastured closely until early June or where the crop was cut by June 10, there is a very small amount of midge infestation this season.

Owing probably to the increased acreage of clover in Oregon this year, the clover root borer, **Hylastinus obscurus**, appears less abundant than in former seasons. By means of flight screens it was found that these insects migrate from old to new fields in late spring and early summer. Some were found to fly as high as 50 feet, which was the height of our tallest screen. At this writing the new generation of root borers present in the fields as nearly full grown larvae.

Sitones hispidulus is abundant in the clover fields of the Pacific Northwest this season. The new generation is now in the pupal stage. Recent observations lead us to believe that this insect is responsible for much injury to vetch, in the Willamette Valley this summer.

Macrosiphum pisi is numerous in many of the red clover fields of the Willamette Valley at this time.

The Hessian fly has been present in the wheat fields of the Willamette Valley in sufficient numbers to work considerable injury this season. Although found working some injury around Vancouver, Wash., the past two seasons. This insect has been relatively scarce in Oregon.

C. W. CREEL.

NEWS ITEMS FROM WEST SPRINGFIELD, (MASS.) FIELD STATION.

July 24, 1916.

The clover leaf weevil, **Phytonomus punctatus**, has been more abundant in clover fields during the present season, than at any time since the establishment of the Station at this point in 1914.

Tychius picirostris, one of the imported clover weevils, has been found in numbers in New Hampshire and Vermont.

Wireworms of the genus Limonius have been very destructive in cornfields at Newfane, Vermont.

Injury to young corn in the fields at Brattleboro, Vt., by an undetermined milliped, have made it necessary to replant some plots two and three times.

Adults of **Macrobasis unicolor** are defoliating potatoes and some clover areas in Vermont.

Macrodactylus subspinosus has been abnormally abundant and destructive in New England this spring. Aside from the usual cereal and forage crops which this species attacks in this section, they have been noted of stripping small elms and alder bushes.

Grasshopper areas in the Merrimac and Connecticut River Valleys which were not treated during the summer of 1915 are being severly damaged at this time. Areas in which the hoppers were eliminated last season, are virtually free of any infestation this summer.

Several thousand puparia of **Compsilura concinnata** are being assembled and shipped to R. N. Wilson at Gainesville, Fla., in an attempt to introduce this species on the grass worm, Laphygma frugiperda.

During the month D. A. Ricker has taken a male of **Polyphylla variolosa**. Several of the foremost Coleopterists in this section, have informed us that this is the first male that they have ever seen from the New England States.

H. E. Smith.

DECIDUOUS-FRUIT INSECT INVESTIGATIONS.

A. L. Quaintance, In Charge.

V. G. Stevens, of Leland Stanford University, has been temporarily appointed to assist W. M. Davidson at Walnut Creek, Calif., in investigations of predatory insects.

A. T. Speare spent the week of July 2 in eastern Massachusetts, southern Maine and New Hampshire in pursuit of his investigations on the fungus disease of Lecanium scales.

FEDERAL HORTICULTURE BOARD.

C. L. Marlatt, Chairman.

(In Cooperation with the Bureau of Entomology.)

As the result of an informal conference on Amendment No. 5, to the cotton regulations held on June 29th, the effective date of said amendment was postponed to January 1, 1917. Amendment No. 5 covers the disfinsection of burlap or other fabrics which have been used for cotton wrappings. It was brought out in this conference that wrappings of this description may be divided into three classes; (1) Gunny from American-grown cotton, comprising about 50 per cent of the total importation; (2) material which has never been used to cover cotton, about 35 per cent; and (3) consisting of either mixed lots or entirely of covers from foreign cottons, making up the remaining 15 per cent.

H. H. Willis, who was formerly located in Boston, has been transferred to Newark, N. J., to supervise the fumigation of cotton at the plant operated by the Clark Thread Company.

H. L. Sanford and D. G. Tower have been temporarily transferred to Brooklyn to supervise the fumigation of cotton by the Vacuum Company which is located in the Bush Terminal Warehouses.

FOREST INSECT INVESTIGATIONS
A. D. Hopkins, In Charge.

WANTED: LARVAE OF LECONTE'S SAWFLY.

During 1912 and 1913 **Diprion lecontei** was very abundant and destructive throughout its range and Mr. S. A. Rohwer made extensive studies on it. Since then the species has been so rare in the vicinity of Falls Church that it has been difficult to get sufficient material to verify previous observations. At present it seems that the species will be more abundant this year, but Mr. Rohwer would be glad to receive material and notes of this or any other species of **Diprion.** All of the larvae of **Diprion** feed gregariously on conifers. **Diprion lecontei** has a greenish yellow larva which is marked with longitudinal rows of black spots and has a reddish head. It has a number of hosts but shows decided preference to red **(Pinus resinosa)** and scrub **(Pinus virginiana)** pine. In sending in material please address it to East Falls Church, Va., give the host plant, the abundance and if the larvae are large note if they have eaten any of the bark. If possible put some larvae in alcohol before shipping as they develop rapidly and may cocoon enroute.

A manuscript, entitled "A Generic Synopsis of the Coccinellid Larvae in U. S. National Museum With a Description of the Larvae of **Hyperaspis binotata** Say", has been completed by Dr. Adam G. Boving and will be published in the Proceedings, U. S. National Museum.

A paper, entitled "On the Taxonomic Value of Some Larval Characters in the Lepidoptera" by Carl Heinrich, is now in press and will appear in the forthcoming number of the Proceedings of the Entomological Society of Washington.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS
W. D. Hunter, In Charge.

G. M. Anderson has been appointed a scientific assistant for service at the laboratory at Tallulah, La., under B. R. Coad. Mr. Anderson is a graduate of Clemson College. For several years he has been conducting investigational and extension work for the College in cooperation with this Bureau. His appointment is from one of the registers of the Civil Service Commission.

A. J. Flebut has also been apointed from the list of eligibles for service at the Tallulah laboratory. He is a graduate of the Massachusetts Agricultural College, and has recently been engaged in work on the whitepine blister rust under Doctor Fernald.

W. D. Hunter visited the laboratory at Clarksville, Tennessee early in July.

The proposed trip of U. C. Loftin and A. G. Davis to Cuba for the purpose of collecting parasites of **Diatraea saccharalis** has been abandoned for the season on account of the delay in passing the appropriation bill.

TROPICAL AND SUBTROPICAL INSECT INVESTIGATIONS
C. L. Marlatt, In Charge.

Mr. Marlatt recently visited Newport, R. I., to look over the experimental work now being conducted by Mr. Dettmar W. Jones on the control of the European earwig (**Forficula auricularia**).

TRUCK CROP AND STORED PRODUCT INSECT INVESTIGATIONS
F. H. Chittenden, In Charge.

Dr. P. A. Boncquet, bacteriologist, was appointed July 16, 1916, as collaborator. He has been engaged for some time in investigations of the curly-top infection of sugar beets in Southern California, one of his projects being wild vegetation as a source of such infection. This is produced by the beet leafhopper (**Eutettix tenella** Baker).

Prof. H. F. Wilson, formerly entomoligist at the Oregon Agricultural College Experiment Station, Corvallis, Oregon, now entomoligist at the College of Agriculture of the University of Wisconsin, Madison, has also been appointed collaborator.

Charles E. Smith, field assistant at Baton Rouge, La., where he was engaged for several months during the past two summers in assisting Mr. Thomas H. Jones in work on insects injurious to truck crops, resigned June 30.

Ray B. Ellis, who was temporarily engaged in assisting Mr. F. B. Milliken on sugar-beet and stored-product insect problems has left the Department, his appointment expiring July 16.

C. Joseph Manter, temporarily employed at Hayward, Calif., when a station was maintained there in charge of Mr. Roy E. Campbell, resigned July 16, his appointment expiring at that time.

This branch of investigations has recently secured another greenhouse similar to the one erected on the Department grounds last year. It will adjoin the first one. This will practically double the greenhouse capacity assigned to the branch and will be used for additional extensive experiments on the control of insects affecting truck crops grown under glass. It is proposed to institute an additional series of experiments with regard to fumigation against such common pests as the greenhouse white fly, thrips, aphides, greenhouse caterpillars, and others.